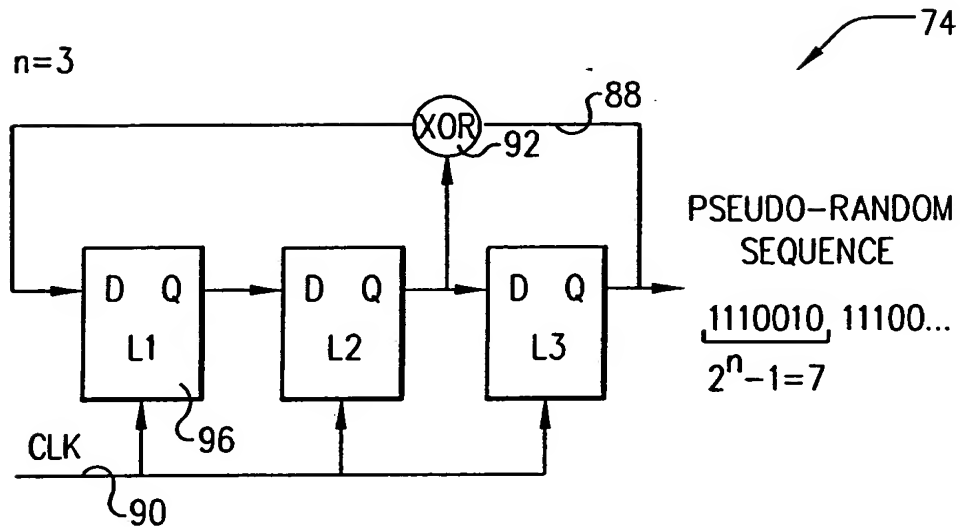


| MODULO-2 ADD & SUB. TRUTH TABLE |   |   |
|---------------------------------|---|---|
| +/-                             | 0 | 1 |
| 0                               | 0 | 1 |
| 1                               | 1 | 0 |

FIG. 3  
PRIOR ART



|       |   |  |   |  |   |
|-------|---|--|---|--|---|
| $S_0$ | 1 |  | 1 |  | 1 |
| $S_1$ | 0 |  | 1 |  | 1 |
| $S_2$ | 0 |  | 0 |  | 1 |
| $S_3$ | 1 |  | 0 |  | 0 |
| $S_4$ | 0 |  | 1 |  | 0 |
| $S_5$ | 1 |  | 0 |  | 1 |
| $S_6$ | 1 |  | 1 |  | 0 |
| $S_0$ | 1 |  | 1 |  | 1 |

STATE TABLE

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FIG. 4  
PRIOR ART

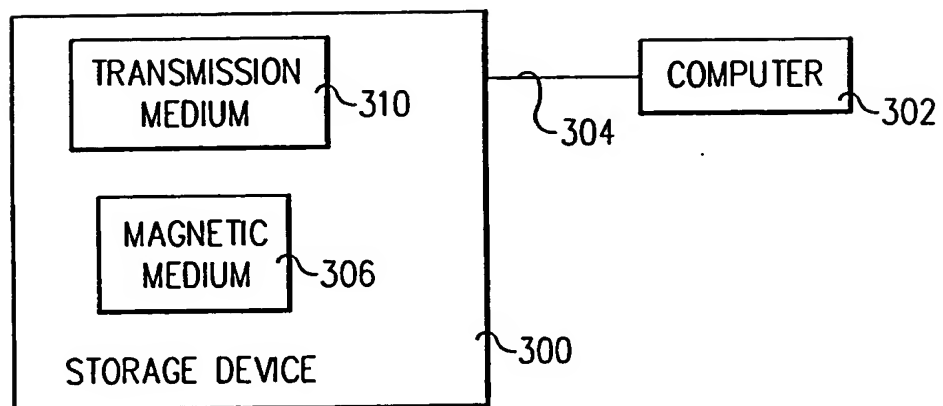
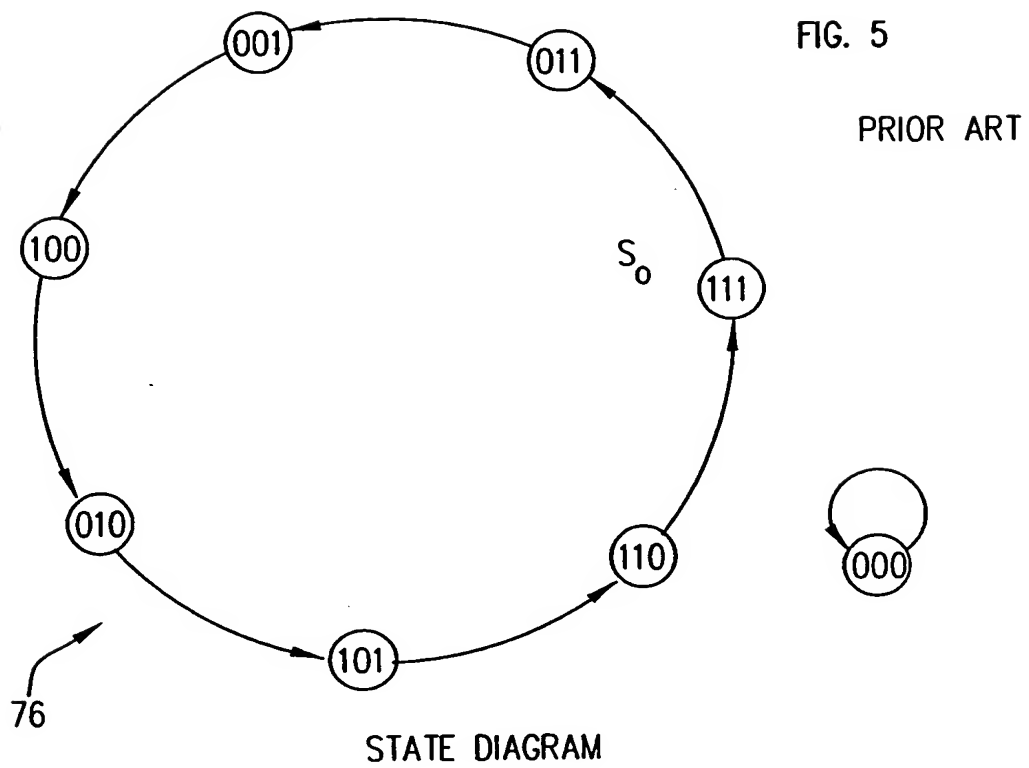
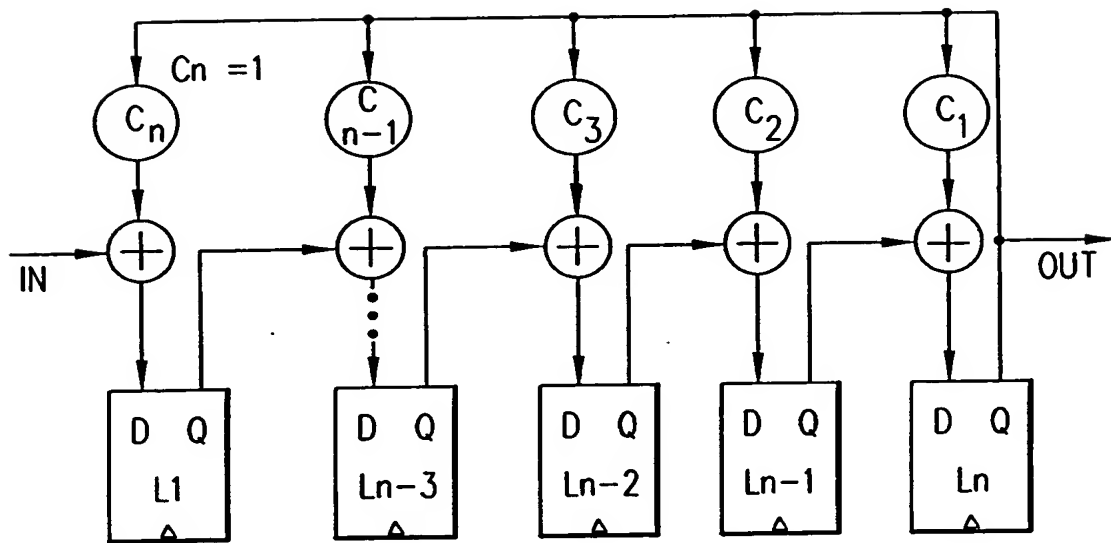
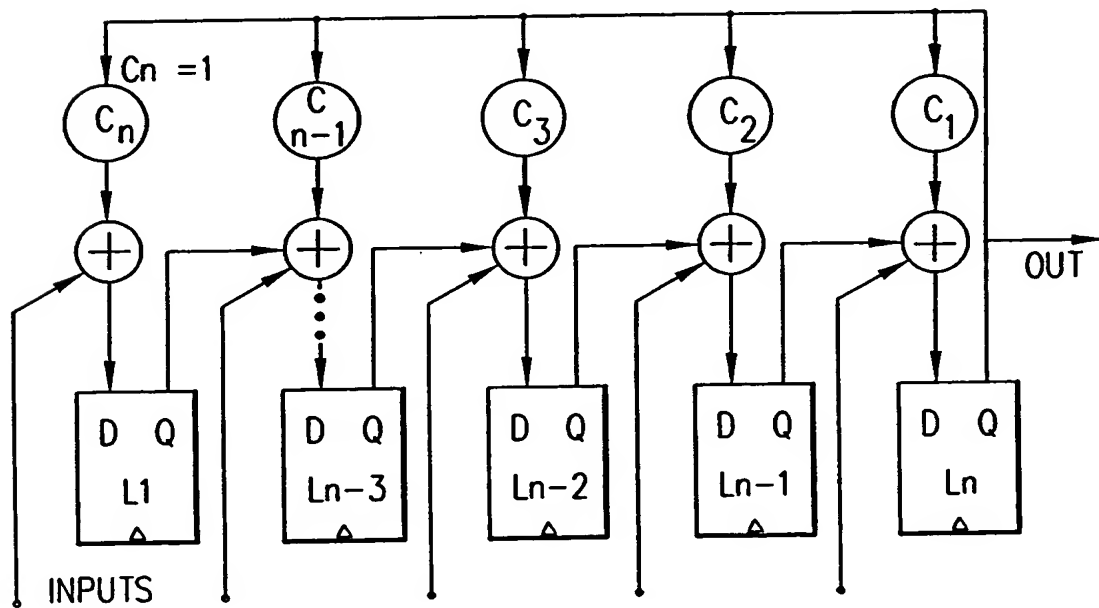


FIG. 17



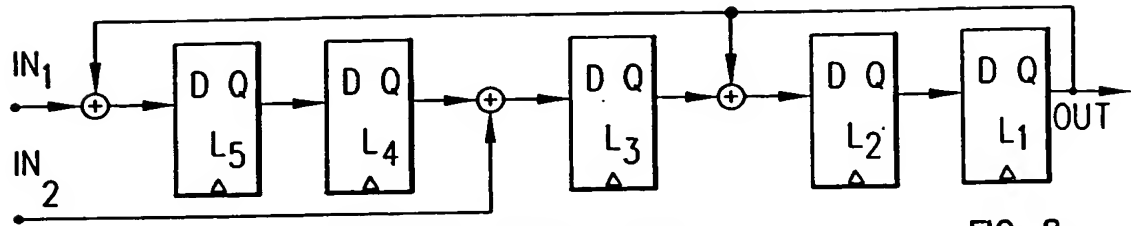
SINGLE INPUT SIGNATURE REGISTER (SISR)

FIG. 6  
PRIOR ART



MULTIPLE INPUT SIGNATURE REGISTER (MISR)

FIG. 7  
PRIOR ART



MAXIMAL LENGTH LFSR  
MULTIPLE INPUT SIGNATURE REGISTER (MISR)

FIG. 8  
PRIOR ART

|    | L5 | L4 | L3 | L2 | L1 |
|----|----|----|----|----|----|
| 0  | 1  | 1  | 1  | 1  | 1  |
| 1  | 1  | 1  | 1  | 0  | 1  |
| 2  | 1  | 1  | 1  | 0  | 0  |
| 3  | 0  | 1  | 1  | 1  | 0  |
| 4  | 0  | 0  | 1  | 1  | 1  |
| 5  | 1  | 0  | 0  | 0  | 1  |
| 6  | 1  | 1  | 0  | 1  | 0  |
| 7  | 0  | 1  | 1  | 0  | 1  |
| 8  | 1  | 0  | 1  | 0  | 0  |
| 9  | 0  | 1  | 0  | 1  | 0  |
| 10 | 0  | 0  | 1  | 0  | 1  |
| 11 | 1  | 0  | 0  | 0  | 0  |
| 12 | 0  | 1  | 0  | 0  | 0  |
| 13 | 0  | 0  | 1  | 0  | 0  |
| 14 | 0  | 0  | 0  | 1  | 0  |
| 15 | 0  | 0  | 0  | 0  | 1  |
| 16 | 1  | 0  | 0  | 1  | 0  |
| 17 | 0  | 1  | 0  | 0  | 1  |
| 18 | 1  | 0  | 1  | 1  | 0  |
| 19 | 0  | 1  | 0  | 1  | 1  |
| 20 | 1  | 0  | 1  | 1  | 1  |
| 21 | 1  | 1  | 0  | 0  | 1  |
| 22 | 1  | 1  | 1  | 1  | 0  |
| 23 | 0  | 1  | 1  | 1  | 1  |
| 24 | 1  | 0  | 1  | 0  | 1  |
| 25 | 1  | 1  | 0  | 0  | 0  |
| 26 | 0  | 1  | 1  | 0  | 0  |
| 27 | 0  | 0  | 1  | 1  | 0  |
| 28 | 0  | 0  | 0  | 1  | 1  |
| 29 | 1  | 0  | 0  | 1  | 1  |
| 30 | 1  | 1  | 0  | 1  | 1  |
|    | 1  | 1  | 1  | 1  | 1  |

FIG. 9

|    | IN1 | IN2 | L5 | L4 | L3 | L2 | L1 |
|----|-----|-----|----|----|----|----|----|
| 0  | 0   | 1   | 1  | 1  | 1  | 1  | 1  |
| 1  | 1   | 1   | 1  | 1  | 1  | 0  | 1  |
| 2  | 0   | 1   | 1  | 0  | 0  | 0  | 1  |
| 3  | 1   | 1   | 0  | 0  | 1  | 0  | 1  |
| 4  | 0   | 0   | 1  | 0  | 0  | 1  | 1  |
| 5  | 0   | 0   | 1  | 1  | 0  | 0  | 0  |
| 6  | 1   | 1   | 1  | 1  | 0  | 0  | 0  |
| 7  | 1   | 1   | 1  | 1  | 0  | 0  | 0  |
| 8  | 0   | 0   | 0  | 1  | 1  | 0  | 0  |
| 9  | 0   | 1   | 0  | 0  | 0  | 1  | 0  |
| 10 | 1   | 0   | 1  | 0  | 0  | 0  | 1  |
| 11 | 1   | 0   | 0  | 1  | 0  | 0  | 1  |
| 12 | 0   | 0   | 1  | 0  | 1  | 0  | 1  |
| 13 | 0   | 0   | 1  | 1  | 0  | 1  | 1  |
| 14 | 0   | 0   | 1  | 1  | 1  | 0  | 0  |
| 15 | 1   | 0   | 1  | 1  | 1  | 1  | 0  |
| 16 | 1   | 0   | 1  | 1  | 1  | 1  | 1  |
| 17 | 1   | 1   | 0  | 1  | 0  | 1  | 0  |
| 18 | 0   | 1   | 0  | 0  | 0  | 0  | 1  |
| 19 | 0   | 1   | 1  | 0  | 1  | 0  | 1  |
| 20 | 0   | 1   | 1  | 1  | 1  | 1  | 1  |
| 21 | 0   | 1   | 1  | 1  | 0  | 1  | 0  |
| 22 | 1   | 1   | 1  | 1  | 1  | 0  | 1  |
| 23 | 1   | 1   | 0  | 1  | 0  | 1  | 1  |
| 24 | 1   | 0   | 0  | 0  | 0  | 0  | 0  |
| 25 | 1   | 1   | 1  | 0  | 1  | 0  | 0  |
| 26 | 0   | 1   | 0  | 1  | 0  | 1  | 0  |
| 27 | 0   | 0   | 0  | 0  | 0  | 0  | 1  |
| 28 | 0   | 1   | 1  | 0  | 1  | 0  | 1  |
| 29 | 0   | 0   | 1  | 1  | 1  | 1  | 1  |
| 30 | 0   | 1   | 1  | 1  | 0  | 1  | 0  |

PRIOR ART

FIG. 10

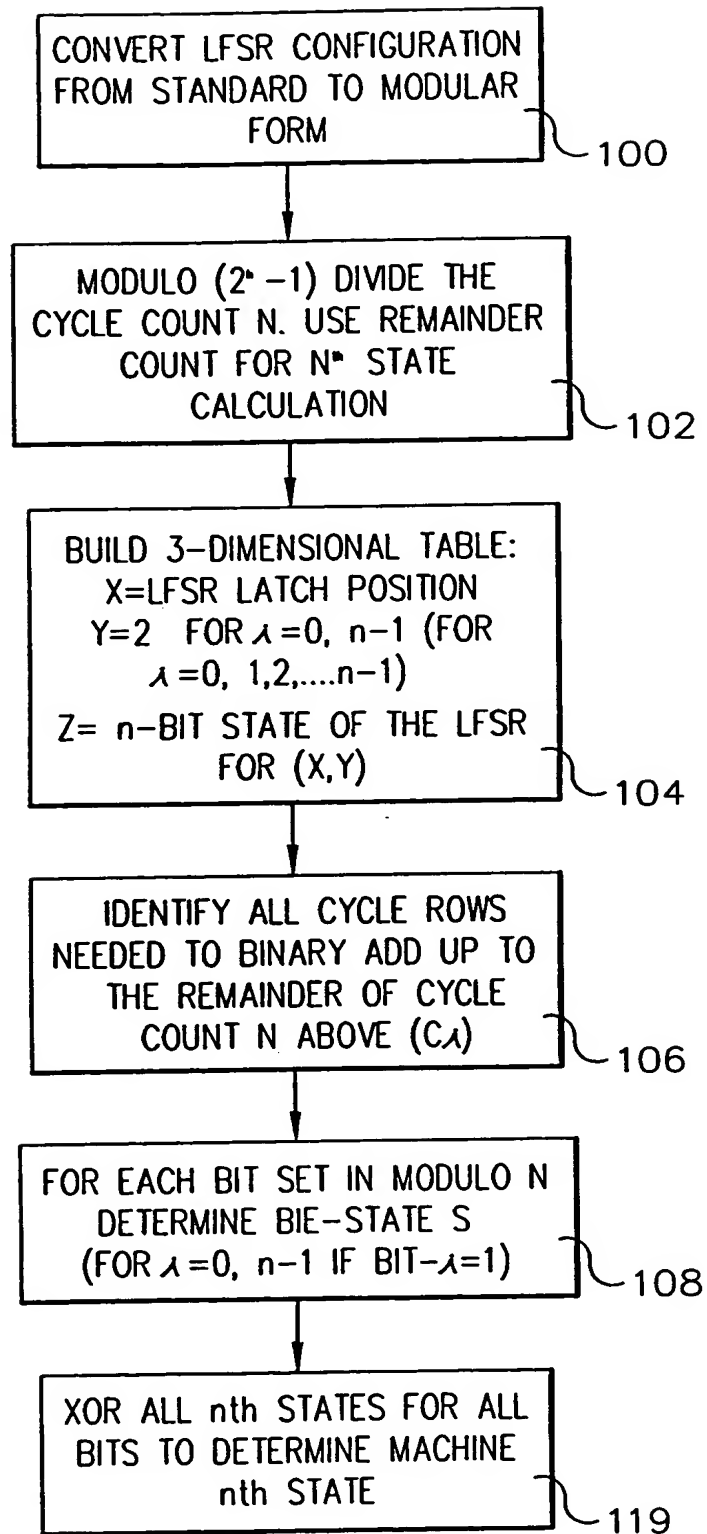


FIG. 11

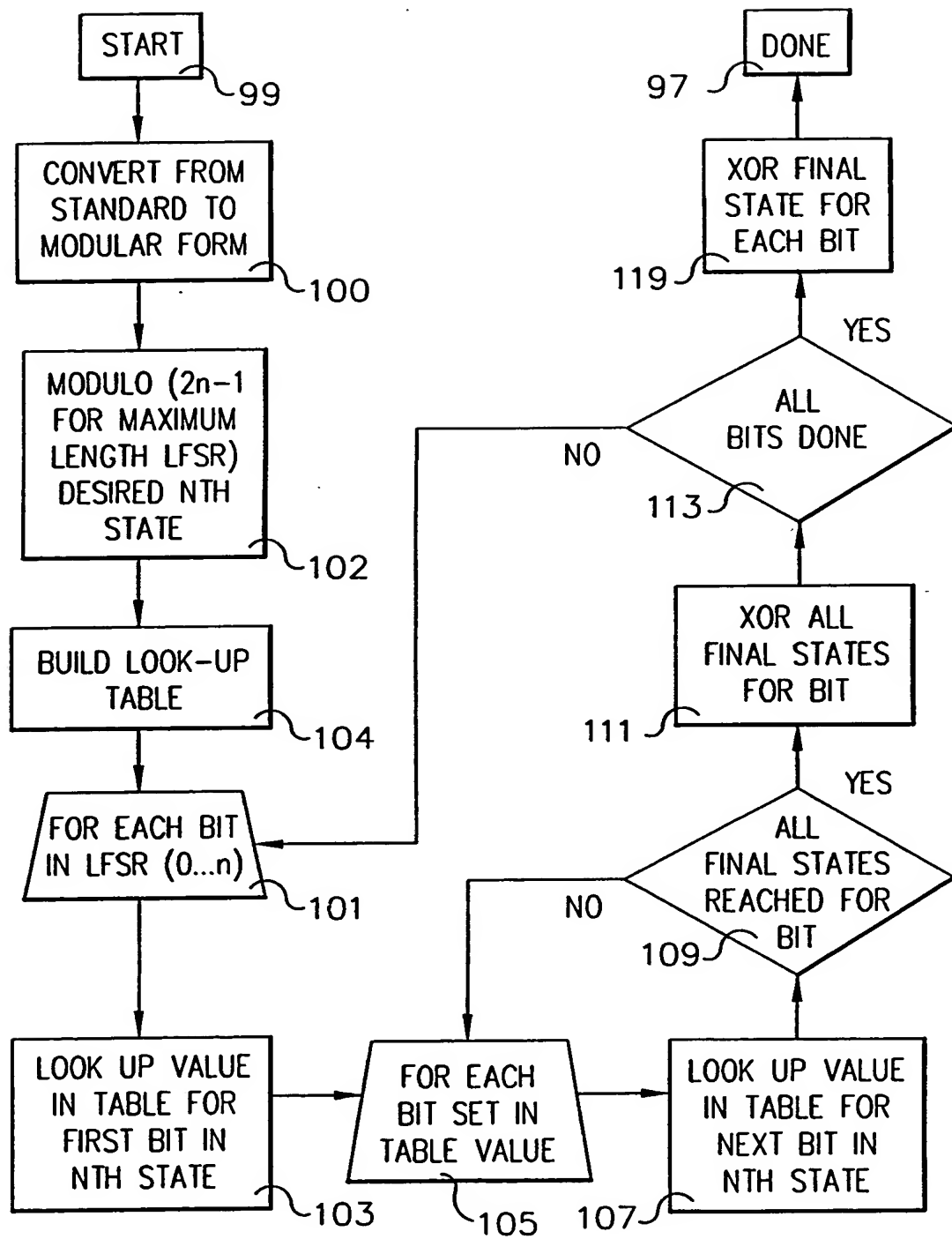
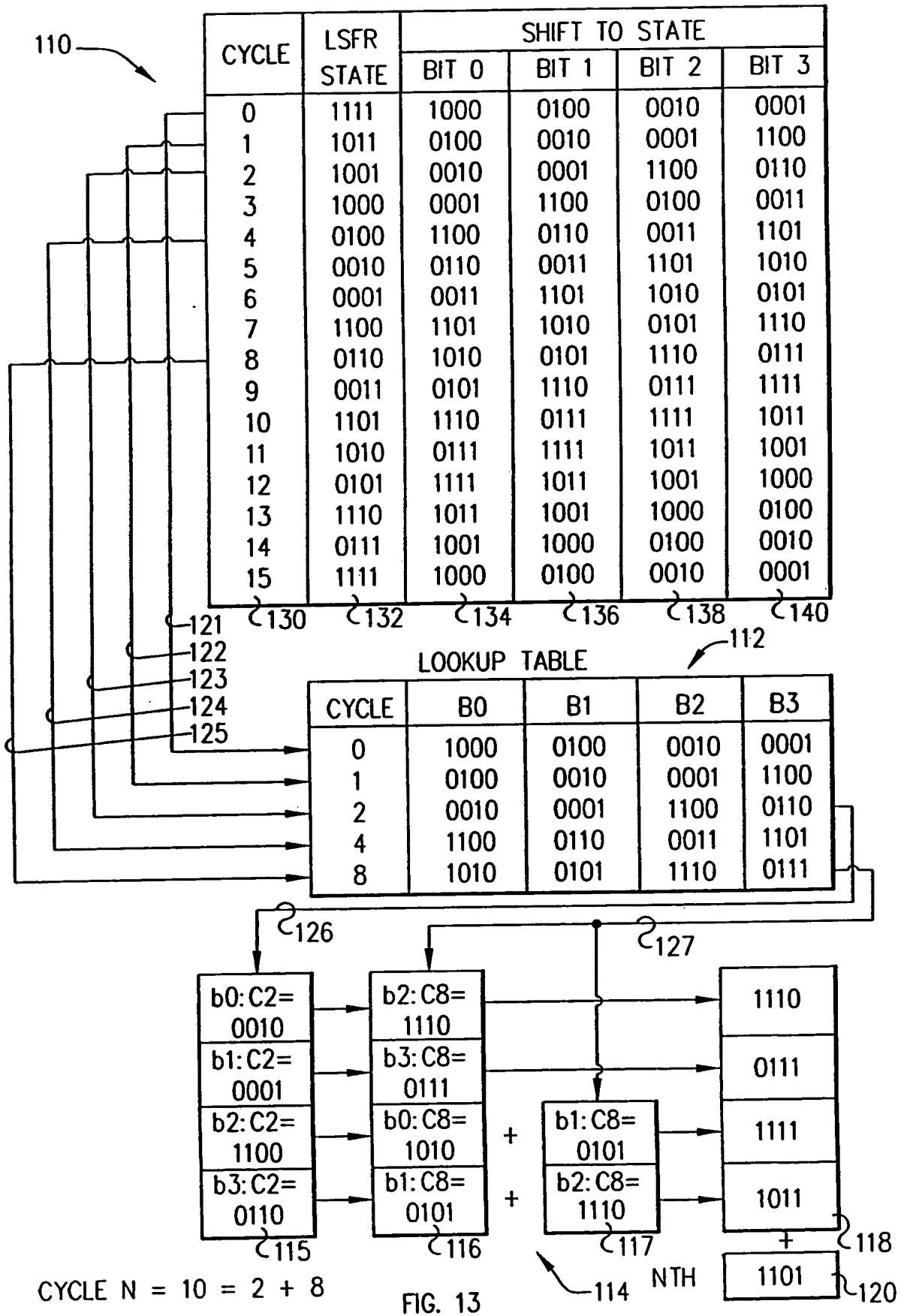


FIG. 12



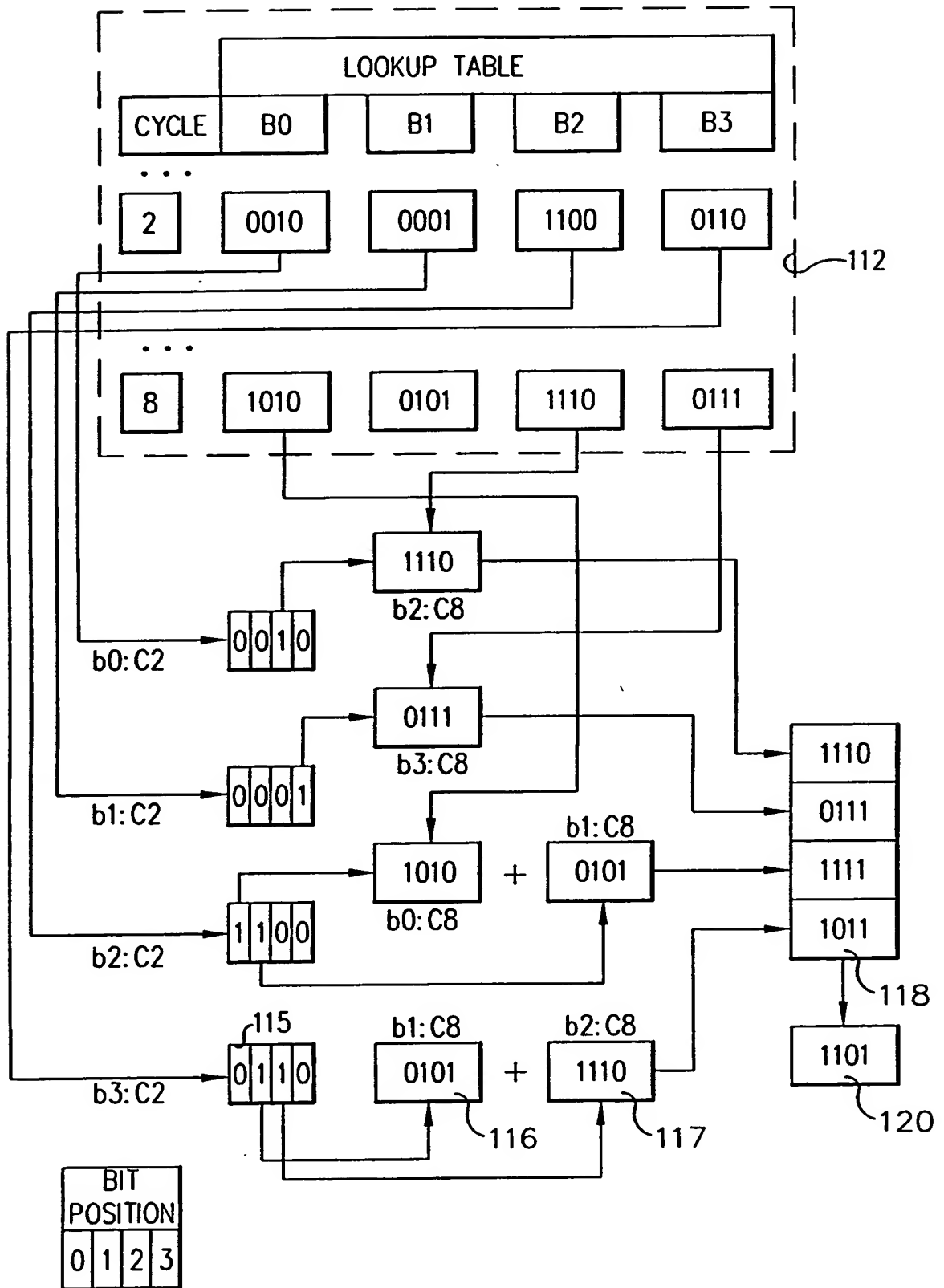


FIG. 14

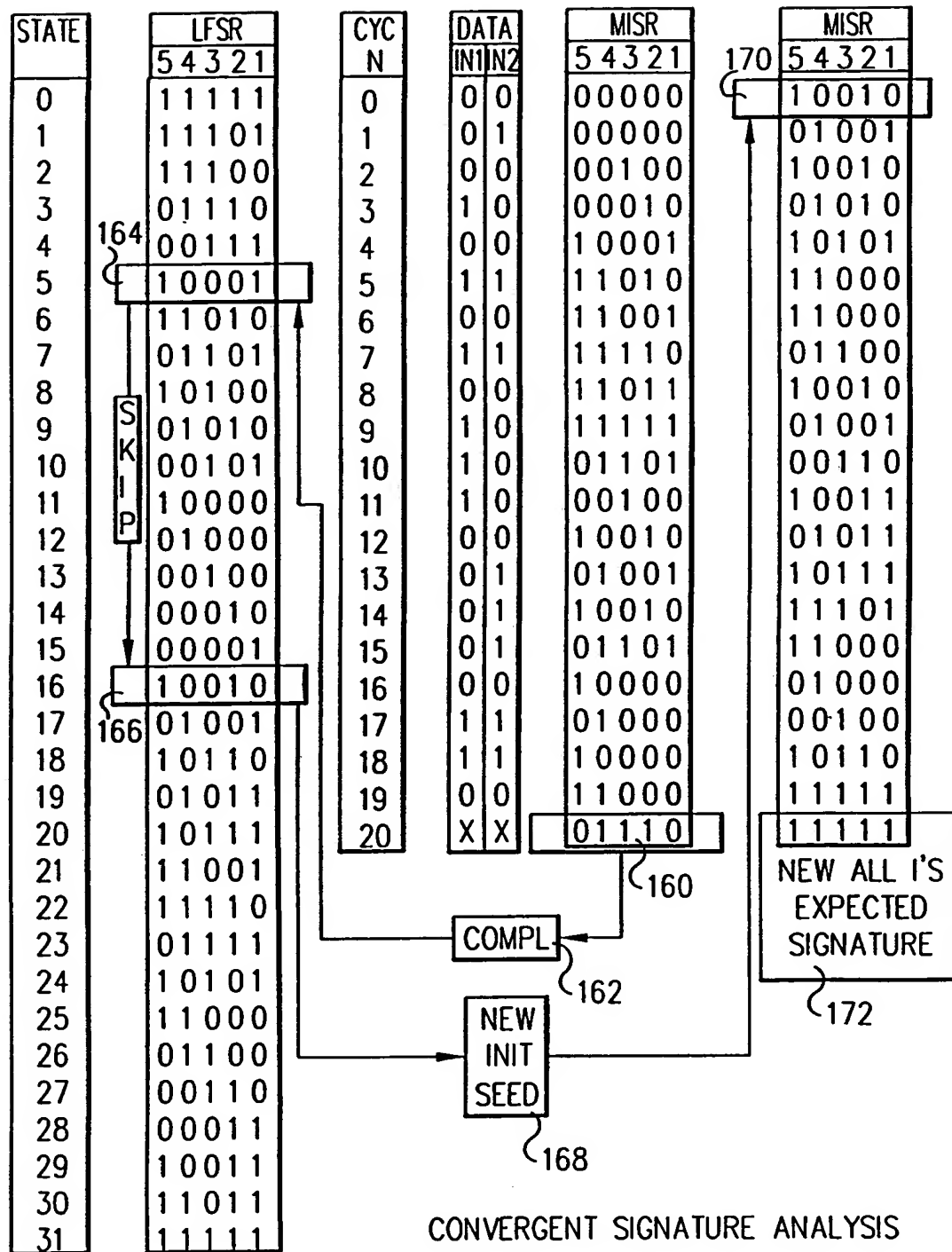


FIG. 15



FIG. 16